The Effects of Anthropology and Archaeology on Early Innovation Studies

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Abstract

The author believes that innovation theorists in the late 19th and early 20th centuries such as Tarde, Schumpeter, and Ogburn were significantly affected by ideas emanating from the anthropological and archaeological fields of that era. Anthropology and archaeology flourished during the 19th century and brought a number of substantial material proofs to the social sciences in relation to social change. The variety of innovation theories at the time seemed to derive, at least in part, from the diversity within anthropology and archaeology. These innovation theories reflected trends or tendencies in anthropology and archaeology in each period, and the theories changed over time along with shifts in other fields.

In this paper, the author compares innovation theories developed by the above mentioned authors with the philosophies that anthropology and archeology had in common (evolutionism and diffusionism), and demonstrates the existence of correlations between developments in these areas.
Keywords: Anthropology, Innovation, Evolutionism, Diffusionism

1. Introduction

The beginning of innovation studies in the early 20th century started with an elaboration of previous explanations of social change. Before that, throughout the 19th century, a plurality of social dynamics theorists speculated that social change followed a common set of unilinear developmental stages in any society or culture. This concept of unilinear developmental stages had a long history and tradition. In sociology, Auguste Comte proposed that all societies go through three stages: (1) theological, (2) supernatural, and (3) positive. He referred to this as developmental stage theory in his *Lecture on Positive Philosophy* (*Cours de philosophie positive*, 1842). He was convinced that not only the natural sciences, but also the social sciences, had to adopt positivism, and that the social sciences must follow the methods of biology, which he considered to be the subject closest to sociology among the natural sciences. In economics, especially in the historical school in Germany, Wilhelm Georg Friedrich Roscher and Bruno Hildebrand also supported the idea of unilinear developmental stages. In the mid-19th century, evolutionary biology underwent a significant transformation due to the impact of Charles Darwin's *Origin of Species*. The

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publication of this work also affected many social sciences such as philosophy, sociology, ethnology, anthropology, and archaeology. At first, social development theorists accepted Darwin's new evolutionary theory as an explanation of the process of unilinear change from one phase to another. However, in the late 19th and early 20th centuries, empirical and comparative studies of many societies and cultures all over the world gradually lead social change theorists to seek more plausible, realistic developmental notions; furthermore, alternative ideas that considered differences between areas or regions were proposed, especially in geography, anthropology, and ethnology. At this time, the first "innovation studies" emerged.

The French sociologist Gabriel Tarde, the Austrian economist Joseph A. Schumpeter, and the American sociologist William Ogburn were the first innovation theorists to attempt to replace the traditional idea of linear developmental theory with more plausible concepts of social change.

This paper shows that anthropological and archaeological ideas in particular influenced the first innovation theories proposed by these three thinkers. Such notions included "diffusionistic" concepts, which explained the spatial distribution of cultural traits by the migration of the people using them or the transmission of information and beliefs; these notions greatly influenced innovation theory in its early stages.

2. Theoretical Developments in Anthropology and Archaeology

This chapter provides a simple chronology of the history of anthropology and archaeology from early the 19th to the early 20th centuries. Historically, even researchers in these fields, who dealt with complex cultural matters, were unable to evade the traditional and unrealistic concept of "unilinear developmental stages." However, scholars in the school of evolutionary anthropology, which existed in the early period of these fields, conducted relatively empirical research, known as the "comparative method." Anthropologists gradually came to accept the possibility of multilinear developmental paths.

2.1 Evolutionists in Anthropology and Archaeology.

Alan Barnard (Barnard, 2000, p. 29) said that evolutionist thought in anthropology predated Darwin. For example, in the early 18th century, a Danish archaeologist, Christian Jurgensen Tomsen, had already conceived of a series of three temporal phases in relation to prehistoric times: (1) the Stone Age, (2) the Bronze Age, and (3) the Iron Age. Before Darwin published *Origin of Species* in 1859, the prevailing idea regarding evolution had been that all species were created independently, that evolution had only occurred within individual species, and that all species followed a decisive path of progress. According to Barnard, such an idea of a developmental passage toward a final destination was related to

the idea of the "great chain of being," which was influential in philosophy at the time of the Enlightenment; this concept assumed that all things could be classified in an orderly manner from low to high, without exception. At the time, scholars of evolutionary anthropology and archaeology, including Thomsen, accepted this principle and regarded it as "dominant of evolution" (Barnard, 2000, p. 29). They believed that even though different cultures developed at different speeds, that all societies passed through the same series of phases.

In the early period of evolutionary anthropology, in the early and mid-19th centuries, this field of study was used to justify the natural law, which was often considered an *a priori* preconception. Debates started on the topic of "matrilineality versus patrilineality." At the time, many scholars supported the idea that matrilineality came into existence before patrilineality. The scholars involved in these debates included Henry Maine, John Lubbock, H.L. Morgan, and J.J. Bachofen. All of them accepted the unilinear explanation of change (in one form or another), and didn't take regional or geographic diversity into account, partially due to the fact that all of them were involved in the legal field and concerned with the laws regarding inheritance, leading them to desire a more decisive conclusion about this matter.

After 1860, there was a surge in the number of anthropological and sociological studies. Key people in this period included Edward Tylor and L.H. Morgan, both of whom — like other scholars — were influenced by the old dogma of "unilinear developmental stages," and made little use of the ideas or terminology of Darwin's evolutionary theory. They believed that the primitive societies still present around the globe had maintained their ancient lifestyles for thousands of years, and that examining such societies would reconfirm the patterns observed among other ancient lifestyles (the comparative method). Consequently, unilinear developmental stages came to be explained through a mix of ethnographic and archaeological data (Thomsen's three stages of prehistoric time, or the discovery of the Paleolithic Period), as well as linguistics (the discovery of the Indo-European language family). The concept of unilineal developmental stages required a basic explanation of the uniformity within each stage. Such uniformity was mainly explained by the idea of independent inventions through "psychic unity" and partially by "diffusion." According to "psychic unity," all humankind shared the same inherent nature; thus, similar inventions would naturally be made simultaneously in geographically distant locations. Evolutionary anthropologists, including Tylor and Morgan, frequently used this explanation to account for the uniformity within developmental stages. However, like other researchers of the era, they were both aware of the importance of the "diffusion" of ideas. Lowie (1958) described Tylor as maintaining "a lively interest in tracing diffused traits side by side with a deep conviction that there had been a general uniformity in evolutionary stages." Contrary to many of the myths surrounding evolutionism, both of these prominent advocates of "evolutionism"

partially accepted the idea of diffusion and adopted it in some cases in which the path of transition could be clearly identified and was traceable.

2.2 Diffusionism

Barnard speculated that one of the origins of the Diffusionist school was the 18th-century philological tradition (Barnard, 2000, p. 47), which contained many philologists such as William Jones, William von Humboldt, Jacob Grim, and Fran Bopp, who were all in some way connected to diffusionism. They studied the distribution of languages, sound shifts, and the diversity of grammatical structures. Their work influenced British evolutionists, although not their German counterparts, and created the basis for British Diffusionism.

The roots of this school can also be traced to the German ethnologist Adolf Bastian. He was also an evolutionist who strongly supported the idea of "psychic unity" to explain similarities between cultures. However, as Barnard pointed out, Bastian drew a distinction between *Elementargedanken* (elementary thought) and *Völkergedanken* (folk thought). While the former was similar in meaning to "psychic unity," the latter expressed the idea that differences between cultures derived from the physical environment. Barnard concluded that the "eventual focus of German-Austrian anthropology on 'folk thought,' in turn, paved the way for diffusionism" (Barnard, 2000, p. 49).

The anthropogeographer Friedrich Ratzel criticized Bastian's emphasis on "psychic unity" and sought to explain similarities between cultures in terms of migration and transmission, using the similarities in hunting bow technology between Africa and New Guinea as an example (Ratzel, 1891). In his explanation of the development of culture, he considered historical and geographic circumstances and argued for the existence of a unique developmental path within all cultures. In 1898, his student L. Frobenius coined the term *Kulturkreis* (cultural circle), which has since come to be viewed as "a basic concept of cultural historical ethnology" (Rebay-Salisbury, 2011, p. 43). *Kulturkreis* is used to describe "culture areas" as widespread zones with shared cultural traits, but in which uniformity has been lost. According to Rebay-Salisbury, the term was already in use by the mid-19th century (ibid., p. 42), but after Frobenius, it "dominate[d] German and Austrian anthropology from the 1890s to the 1930s" (Barnard, 2000, p. 50). Graebner developed this idea further and defined *Kulturkreislehre* as a theory with which to explain cultural circles in his book, *Methode der ethnologie* (Graebner, 1911). Wilhelm Schmidt followed Graebner and "began to elaborate his own version of the *Kulturkreis*" (Harris, 1968, p. 383). While there were slight differences between their theories and methods, Graebner and Schmidt shared a common goal in reconstructing various original cultures. Further, they rejected the idea of "psychic unity" and independent invention which, as shown above, had also been used to explain similarities between cultures.

The "cultural area" approach, described above, can be divided into two distinct strands: 1) American anthropology, which developed from German-Austrian diffusionism; and 2) "Regional comparison" studies, which were independent of schools or national backgrounds (Barnard, 2000). The second strand subsequently evolved into various new forms including multilineal evolution, functionalism, and structuralism. The first strand was initiated by the German ethnologist Franz Boas, who himself was influenced by Ratzel in his youth and introduced Ratzel's ideas to North America (Trigger, p. 219). However, in this paper, the author will focus on American anthropology.

In the early 20th century in the United States, Franz Boas undertook a research project on the "cultural areas" of Native Americans. He had studied physics, geography, and mathematics at the universities of Heidelberg and Bonn, which had made him a science-minded ethnologist. As an ethnologist, his early interests included mythology and folklore because he believed "these materials would be useful in attempt[s] to distinguish 'independently invented' from diffused" cultures (Harris, 1968, p. 260). While he apparently accepted diffusionistic ideas in the initial stages of his career, he gradually came to be dissatisfied with them and later remarked on Frobenius' work that "[by] following the methods presented in this book, anything and everything can be proved. It is fiction, not science" (Boas, 1899, p. 755). Although he admitted that diffusion was more common than the idea of independent invention, he also became aware of cases of "independent invention," "parallel evolution," and "convergence." He modified both the "historical" and "relative" methods in his work, and conducted empirical research to define specific areas in which to record "cultural traits," which he regarded as the basic units of culture (Barnard, 2000, p. 55). He also rejected the rise of social Darwinism and opposed the idea that certain races or ethnic groups were racially and biologically superior than others. Kroeber was the first of Boas' students and received his doctorate from Columbia University. Although most of his research coincided with that of his teacher, his concept of the "superorganic" was unique to his work. Here, "superorganic" means that "when we consider culture, we are dealing with something organic but that which must also be viewed as something more than organic" (Kroeber, 1948, p. 253). Kroeber considered cultures holistically and "argued for the complete subordination of the individual to his cultural milieu" (Harris, 1968, p. 327). This can be seen as a departure from Boas' teachings and opposed the "Great Man" theory of history (ibid., p. 327). Kroeber focused on patterns in art, religion, philosophy, and even technology and science; furthermore, he believed that cultural milieu determined inventions in these fields.

2.3 Debates between Evolutionists and Diffusionists

Benoît Godin focused on the diffusion controversy and stressed the influence of this

debate on the later understanding of innovation theory. He pointed out that one of the contentious issues arose from the "comparative method" of research. He argued that the "explanation of civilization in terms of evolution and distinct stages" (Godin, 2013, p. 6) was based on unrealistic assumptions: (1) That human nature is the same everywhere, 2) That differences among societies represent different stages, and 3) That development by stages can be seen as analogous to the embryo's lifecycle, or organic change or growth (ibid., p. 7). These assumptions lead to the further hypothesis that "similar inventions occurred at the same time parallel and independently," and that the diffusionists rejected this hypothesis.

The first assumption was closely related to another hypothesis, that of "psychic unity." In this regard, Fritz Graebner repeatedly referred to the lack of evidence and misinterpretation of data used by Morgan, Tylor, and Bastian to support the idea of "psychic unity." Diffusionists, including Graebner, assumed that the agents within cultures are fundamentally uninventive, with inventions seldom occurring independently. Consequently, the similarities between cultures can be explained by "the diffusion" of inventions. They sought to find a unique origin by which to explain the similarities between cultures, and developed their research based on geographic and historical evidence.

Boas also held this diffusionistic view. According to Godin, Boas opposed "psychic unity" on historical grounds. He stressed the "varieties of forms among societies or cultures," stating that "no one invention is identical" (Godin, 2013, p. 8). To explain this variety, he emphasized that "diffusion is not mere imitation or 'mechanical addition' but is in itself invention" (ibid., p. 9). Consequently, diffusion produces a "new mixed cultural type" (ibid., p. 9).

Godin referred to another cause of similarity between inventions: "convergence." Similar inventions can be produced through independent thought or development because patterns of forms "are limited in number or possibilities due to many factors: history, psychology and techniques" (ibid., p. 10). Harris explains this "convergence" as "culture evolv[ing] toward a similar condition through dissimilar steps" (Harris, 1968, p. 176). As Boas opposed deterministic dogma in both evolutionism and diffusionism, he used the ideas from each scholar only when supported by empirical evidence.

3. Early Innovation Theories and How They Were Affected by Anthropology and Archaeology

The author postulates that the early innovation theories initiated by Tarde, Schumpeter, and Ogburn were due to the replacement of unilinear developmental theory. To this end, all three scholars referred to results obtained in archaeological and anthropological studies; they were supported, strengthened, and even inspired to create their theories by the work done in

these fields. As mentioned above, the most significant feature of unilinear developmental theory was that "there exist[ed] only one dominant line of evolution" (Barnard, 2000, p. 29). All the above mentioned innovation theorists explicitly objected to the idea of "unilinear development" in their publications and stressed the importance of "diffusion."

3.1 Gabriel Tarde

In his working paper for the Project on the Intellectual History of Innovation, Godin stated that "the first theory of innovation came from the French sociologist Gabriel Tarde in the late nineteenth century" (Godin, 2008, No. 1, p. 26). Rogers also regarded Tarde as the one of the sources of diffusion theory in the social sciences (Rogers, 2003, p. 40-41). Tarde was the first academic to develop an innovation theory that possessed many of the characteristics widely accepted today. Consequently, any consideration of the roots of innovation theory should begin with an examination of Tarde's work.

Gabriel Tarde's influential book *Les lois de l'imitation* (Tarde, 1890:1903) gave a detailed account of the phenomena of social change through so-called "psychological sociology." In the preface to the first edition of his work, he clarified his purpose as an attempt to outline a "pure sociology" or "general sociology" that could be applied to any society in any era, and formulated the "inventor—imitator" dyad. However, although Rogers viewed him as a "diffusionistic theorist," sections of *Les lois de l'imitation* suggest that he accepted the notions of "psychic unity" and "convergence."

> ⋯there certainly are many real and important resemblances between civilizations which have been spontaneously produced between civilizations without any known or probable intercommunication. Moreover, I admit that, in general, when the current of human genius has once set towards inventions and discoveries, it finds itself confined by a sum of subjective and objective conditions, like a river by its bunks, between narrow limits of development. Accordingly, even in distant regions there may be a certain approximate similarity between its channels. It may chance to show, less often, however, than we might suppose, a parallelism of certain pregnant ideas, of ideas which have appeared independently and which are equivalent to, if not identical with one another. But in the first place, in as much as men have been forced by the uniformity of their organic wants to follow the same trend of ideas, we have a fact that belongs to the biological, and not to the social, order of resemblance. (Tarde, 1890:1903, p. 41-42)

As seen here, he apparently had little problem with the "evolutionalistic" explanation of "psychic unity" and "convergence." However, in the same chapter, he also writes:

> In general, if we do not wish to explain resemblances between communities which are separated by more or less insurmountable obstacles (although these may not have existed in the past), through the common possession of some entirely forgotten primitive model, only other explanations, as a rule, remain. Each community must have exhausted all the inventions which were possible in a given line save the one adopted, and eliminated all its other useless or less useful ideas. But the comparative barrenness of imagination which characterizes primitive people is opposed to this hypothesis. We should then accept the former hypothesis and refuse to renounce it without good reason. (ibid., p. 46-47)

This indicates that Tarde supported diffusionism, which opposed evolutionism. He pointed out the possibility of transmission in the prehistoric period between cultures that presently appeared to be unrelated, and attributed some cases of transmission to great invasions, such as the Mongol conquest in the 13th century (ibid., p. 47). Indeed, in his work, he repeatedly rejected the unilinear model. He stated: "There has been much talk among artists of an alleged law of development which would subject the fine arts to turn forever in the same cycle and repeat themselves indefinitely," but "unfortunately no one has ever been able to formulate it with any precision without running foul of the fact" (ibid., p. 56). He also added that "we shall save ourselves from the error of differentiating between ancient and modern law, of digging a factitious abyss between them, and of supposing that bringing-over from one to the other, in so far as it is genuine, has only been effected once in the world's history." He went on to say that even the eminent thinker Henry Sumner Maine was not free from this illusion (ibid., p. 314). In another book, this criticism of unilinear development was made even more explicit. In a paper, *Les lois sociologie*, he pointed to various theorists who supported the idea of "unilineal developmental stages" and "psychic unity" such as Comte or Vico, and remarked that sociology had repeatedly made the same errors up until his time (Tarde, 1898).

In Chapter 4 of *Les lois de l'imitation*, Tared discussed issues of "archaeology" and "statistics":

> It is truly surprising to find that at a certain period of antiquity such a useless thing as amber was imported from its original place of deposit on the Baltic to the extremes of southern Europe⋯It seems as if every well-defined archaeological period were distinguished by the preponderating prestige of some particular civilization which illuminated and coloured all other rival or subject civilisations ⋯ (Tarde, 1890:1903, p. 96-97)

Tarde also stressed similarities between artifacts and styles, saying that "[t]his impression cannot be misleading, and it, too, should make us by analogy, that we ourselves are infinitely more imitative than inventive" (ibid., p. 98). In this way, the archaeological implications also support his "diffusionistic" view.

However, no direct influence from the German diffusionist school can be traced in the *Les lois de l'imitation*, which was published in 1890. The reason is that Ratzel's influential paper — *Die afrikanischen Bögen, ihre Verbeitung und Verwandtschaften*, in which the fundamental ideas of diffusionism were first published — was not published until 1891. Tarde's theories were particularly "diffusionistic"; one conceivable explanation for this was his interest in philology. As mentioned in the previous section, philology was one of the origins of "diffusionist" theory. In this field, researchers had already examined the origins of various languages and illustrated their findings in the form of a tree. Tarde used a number of examples from philology in his books, so we can speculate that he was already aware of the importance of diffusion in social phenomena.

It is a mystery why there are no signs of Tarde's influence on the German diffusionist school. However, his imitation theory came into "vogue" in the 1950s among American anthropologists, who focused on "personality and culture." According to Kroeber, "the real roots of this go back much further than most participants in the movement are aware of: one need only mention Tarde" (Kroeber, 1952, p. 148).

3.2 Joseph A. Schumpeter

In 1911, Joseph A. Schumpeter, a prominent economist in Austria, announced in a lecture given at his farewell ceremony at Czelnowittz University that the success of "the era of cultural theory" rested on our shoulders. In this lecture, he also explained the high degree of homogeneity within *kulturkreis*, and how individuality and personality emerged from such homogeneity (Schumpeter, 1911, p. 132). In this lecture, he also rejected *Finalismus* (teleology) citing Condorcet, and stated that the misuse of the word *Civilisation* (civilization) was the main cause of problematic teleology (ibid., p. 57). This comment clearly expressed his attitude toward "economic dynamics" in research. Three years before this lecture, Schumpeter had published his first book *Wesen und Hauptinhalt der theoretischen Nationalökonomie* (1908) in which he defined the contents and extent of pure economy, and clearly distinguished it from other economic factors related to subjects like biology, psychology, anthropology, and even sociology. Although he declared that these subjects were useless in applying the pure economic method, he explained the "condition" of static equilibrium using geographic factors (*geographischen Milieu*), which, he said, was one aspect of ethnological research. He stated:

> Da ferner eine Einwirkung auf das geographische Milieu seitens der Menschen innerhalb gewisser Grenzen möglich ist, so läBt sich von einer Wechselwirkung zwischen demselben und der Natur des Menschenrassen, aber auch die Rassen ihr Milieu former (Schumpeter, 1908, p. 121).

Here, Schumpeter is demonstrating the influence of Ratzel's anthropogeography, which stressed the importance of geographic circumstances in any explanation of cultural dynamics. On the other hand, as for the study of social dynamics, he appeared willing to accept the results of anthropological research (ibid., p.547) regardless of whether it represented "developmental stage theory" or not. In the book, he willingly borrowed from the findings of both of evolutionists and diffusionists.

However, in the second edition of *Wirtschaftlichen Entwicklung* (1926), he was explicit in his opposition to "unilinear developmental theory" and "evolutionism."

> The social process⋯has led us away from the metaphysical treatment of social development and taught us to see the possibility of an empirical treatment; but it has done its work so imperfectly that we must be careful in dealing with the phenomenon itself⋯. The same is true of the postulate that a nation, a civilization, or even the whole mankind, must show some kind of uniform unilinear development, as even such a matter-of-fact mind as Rosher assumed and as the innumerable philosophers and theorists of history in the brilliant line from Vico to Lamprecht took and still take for granted. Here, too, belong all kind of evolutionary thought that centre in Darwin —at least if this means no more than reasoning by analogy—and also the psychological prejudice which consists in seeing motives and acts of volition than a reflex of the social process. But the evolutionary idea is now described in our field, especially with historians and ethnologists, for still another reason. To the reproach of unscientific and extra-scientific mysticism that now surrounds the "evolutionary" ideas, is added that of dilettantism. With all the hasty generalisations in which the word "evolution" plays a part, many of us have lost patience. (Schumpeter, 1926: 1934, p. 57-58)

Why did his attitude change so markedly after the publication of the first book? In 1912, he published his masterpiece, the first edition of *Wirtschaftlichen Entwicklung* (Schumpeter, 1912). In the seventh chapter of that book, he declined to make a simple analogy between social dynamics and biological evolution, and elaborated on a theory of social evolution that demonstrated a high degree of generality and could be applied to various social phenomena. In this theory, he theorized that most economic agents were static, adaptive (ibid. p. 328),

and uninventive. The rejection of easy analogies between social and biological phenomena may have reflected his opposition to the tendency toward dilettantism (or even the rise of social Darwinism) common at the time. However, if Schumpeter was already aware of the controversy between evolutionism and diffusionism, it would be more plausible to speculate that his writing was an expression of his rejection of literal "evolutionism" in ethnology. Consequently, this would explain why he rejected the term "evolution" early on in his career. Further, he viewed social change not as continuous, but as leaping from one equilibrium to another and changing entire social systems along the way with unexpected force; he felt that reality did not progress as evolutionists saw it, which meant assuming that one state develops naturally and continuously from another due to inherent forces within it (which Vico, Comte, and Rostoe argued). To avoid making an easy analogy between the development of societies and embryonic systems, he brought the concept of the entrepreneur into the static method as a factor leading to social change. The entrepreneur was an agent that possessed subjective characteristics and was deeply related to his/her historical setting, so that the concept of entrepreneur did not fit into any theory based on deterministic systems. However, in Schumpeter's socio-development theory, the entrepreneur was an inevitable factor that acted as an engine of socio-economic development.

Although Schumpeter's explanation of innovation is well known to have depended largely on the notion of the entrepreneur as a driving force, interestingly enough, in an unpublished paper titled *Entwicklung* (Development) he did not refer to it at all (Schumpeter, 1932:2005). In the paper, Schumpeter attempted to explain his view of development using 13th-century art from Florence. In doing so, he made this somewhat "diffusionistic" statement: "Let us take a look at the paintings of a homogenous cultural system demarcated in space and time" and went on to say "[w]e then face an imprinted form whose inner logic can be recognized as a distinct whole, which is remarkably stable" (Schumpeter, 1932:2005, p. 112). According to Schumpeter, such stability can also be seen in 15th-century Florentine art, such as in the representation of the *Madonna*. He began with the following "steps" to explain this transformation:

(1) Do not explain change as progress or regress. Stop any value-judgment regarding the change that is taking place.
(2) Do not interpret change solely based on theory. Stop interpreting change from a line of development that has not been derived in an empirical way.
(3) Avoid making assumptions about uncreated and unchangeable structures.

(ibid., p. 112)

These criteria clearly show the influence of the "evolution/diffusion" controversy. The

first step was shared by 19th and early 20th century academism as an "objective science" and was one of the grounds for academics' criticism of unilinear development. The second step was the insistence on "diffusionism" which fundamentally belonged to the "German historical school," while the third step was seemingly related to the opposition between evolutionism and diffusionism. In studying diffusionism, researchers did not take care to explain the "inventor" as a driving force because they viewed most agents as essentially "uninventive," and they treated the distribution of inventions objectively as representing *Kulturkreis* in time and space. Schumpeter appeared to create his own theory of cultural change under the influence of both "diffusionists" and "evolutionists," though he apparently was not aware of the details of the controversy between these two groups during the first stages of his research. However, he gradually came to avoid using the unilinear developmental argument in his theory since it was based on unrealistic assumptions or out-of-date "evolutionistic" explanations. He tried to formulate a deterministic theory about social change and wrote the paper *Entwicklung* (*Development*) based on an empirical method taken from diffusionists. However, the characteristics of his perception of the entrepreneur were so "historical" that he left the investigations of "cause" to scholars in other fields such as sociology, and gave up on his efforts to clarify the cause of "novelty."

Schumpeter was apparently familiar with the controversy between evolutionism and diffusionism, at least by the time he wrote his final book. In his posthumously published book *History of Economic Analysis* (1954), he introduced various spheres that he considered to belong to the general field of sociology from 1870 to 1914. He cited (a) Historical Sociology as represented by the German historical school, (b) Pre-Historical-Ethnological Sociology, (c) Biological Schools, and (d) Autonomous Sociology (including the ideas of Tarde and Durkheim). If this ordering of schools reflected his interests, he would have given greater weight to ethnology or cultural anthropology. In the book, he clearly described the difference between the "evolutionary school" (Tylor, Morgan, and Bachoffen) and the "diffusionist school" (Graebner and Schmitz), as well as the controversy between them:

> [M]ost ethnologists adhered to what may be called a theory of "independent origins [of invention]" and "autonomous development." Now, Graebner and his followers challenged this theory. On the strength of the fact that primitive cultural patterns are very stable over long periods, they denied the independent origins and the similarities as an indication—if not proof—of a common source from which the use of, say, a particular type of button would spread by diffusion instead of being autonomously invented. Hence the existence of areas of culture—*Kulturkreis*. (Schumpeter, 1954, p. 787)

Schumpeter appears unable to accept the theory to its full extent. Nevertheless, he referred to the impact of the diffusionist school on sociology, stating that "its fundamental importance for the whole of sociology is evident," and "[e]ven limited acceptance imparts a serious shock to the evolutionary views of that period and makes quite a difference to what we have called headquarters sociology" (Schumpeter, 1954, p. 787).

We cannot speculate as to when he first became aware of the controversy based solely on textual evidence. Indeed, he scarcely referred to matters relating to ethnology and cultural anthropology in any of his books or papers. However, in his first book, we can find some explanation for his hesitation in making explicit any influence he might have felt from these fields. He said that "In de ökonomischen Lehrbüchen, in denen man so regelmäBig Bemerkungen über Psychologie und Biologie findet, wird diese Frage meist nicht ex professo behandelt, wenn auch die Meisten ethnologishe Tstsachen verwerten" (Schumpeter, 1908, p. 547). Such a tendency within academism in economics might be the reason Schumpeter later removed Chapter 7 of *Wirtshftlihen Entwicklung* after the second edition, and refrained from publishing the paper *Entwicklung*.

In 1939, he attempted to unify all his efforts to explain economic development and wrote the book *Business Cycles*, in which he gave historical explanations for technological expansion and applied it to business cycle theory. However, after the publication of this book, in his later years, he gradually turned away from this topic and seemed to focus on matters related to the concept of the entrepreneur or methodology (Yagi, 2004).

3.3 William Ogburn

The University of Chicago sociologist William Ogburn published *Social Change with Respect to Change and Original Nature*, a book in which he attempted to clarify the system of "cultural evolution" (Ogburn, 1922). Although he also appeared to reject the theory of developmental stages, his focus was not on the teleological developmental stage theory itself, but on the biological explanation attached to it. He was greatly influenced by Boas and Kroeber, and tried to explain the diversity of cultural levels without referring to biological stages inherent in nature.

In the book *Social Change*, he clearly rejected the unilinear developmental stages:

> The inevitable series of stages in the development of social institutions has not only not been proven but has been disproven. For illustration, the history of a particular social institution among a particular people may show a series of forms: among other peoples, though, no such similar series of forms appeared. The attempts to find laws of heredity, variation and selection in the evolution of social institutions have produced few results either vital or significant. (Ogburn, 1922, p. 57)

Here, we see Ogburn as an empiricist and radical Darwinist. However, following Boas and Kroeber, he also rejected social Darwinism as leading to racism or eugenics. He referred to Morgan's explanation of the phases of transition from the metronymic to the patronymic stage, and criticized his use of biological justifications for this transition. He also mentioned the biological aspects of "social evolution":

> Social evolution is the evolution of society and society is usually described in psychological terms, such as sociability, gregariousness, association, response to stimuli and consciousness of kind, and not in cultural terms. If society be thus strictly defined, then social evolution would mean the evolution of such mechanisms of association…. If social evolution be interpreted in this strict psychological conception of society, then the evolution in the psychological mechanisms of association becomes essentially biological evolution…. (ibid, p. 58-60)

This scheme recalled previous attempts to attribute the differences in developmental levels between cultures to biological factors. To avoid such an explanation, he followed Kroeber's conception, which clearly distinguished the study of culture from sociology, regarding the former as a subject of science, and the latter as psychology, thus a more biological subject (Kroeber, 1917, 1918:1952). Ogburn adopted this idea in his cultural evolution theory and tried to avoid biological explanations relating to social evolution.

He attributed development to cultural accumulation and offered a theory of cultural evolution in which he also rejected the "Great Man" theory. He took a position of "cultural determinism," explaining that many inventions were conditioned by the culture's existing status: they arose through the accumulation of knowledge. Consequently, differences in the level of accumulation can explain variations in the level of a culture's development. The interesting thing here is that Ogburn admitted that there could be two paths to the accumulation of knowledge: invention and diffusion.

> The social heritage of a particular people also grows through the adopting of a portion of culture in use by some other people. The culture of particular locality is to be accounted for, therefore, either by invention or by diffusion. It is much easier to borrow culture than it is to invent it. Diffusion is known to occur even where the contacts are rare and the distances are great. The explanation of a particular culture on the basis of inventions or on the basis of diffusion, and the comparative frequency of invention and diffusion have been a central theme among anthropologists for years. The same things have been invented in different parts of the world at different times. But diffusion is relatively the much more common occurrence. (Ogburn, 1922,

p. 88-89)

This statement clearly demonstrates that the controversy between "unilinear development stage theory" and diffusionist theory could be settled by dismissing the theory of developmental stages as unreliable. Thereafter, the crux of the controversy gradually shifted to more specific areas such as providing proof of existing simultaneous inventions, or how inventions were generated.

Following Kroeber, he illustrated his concept of simultaneous invention using many examples of scientific discoveries and industrial inventions. However, as for explaining how inventions are produced, he used the traditional "invention-diffusion" dyad and described inventions as "the achievement of native ability" (ibid., p. 80) following ideas commonly accepted in the 1920s. As Jon McGee pointed out, these notions formed an explanatory dilemma between cultural determinism and the idea of the inventor. The cause of this dilemma was derived from differences in the methodologies used by anthropologists and sociologists. The former reflected Kroeber's idea of the "superorganic," which regarded culture holistically, while the latter was presumably influenced by the psychological sociology of Giddings, who was Ogburn's teacher during his time as a doctoral student at Colombia University. The problems discussed by Boas, Kroeber, and Ogburn, such as the "Great Man theory versus historical determinism," added further controversy to the ongoing debate on the "sociology of invention" (Gilfillan, 1935).

The controversy over socio-cultural evolution theory in an abstracted form later waned, and theorists became concerned with more concrete problems. In 1950, Ogburn reviewed the discourse on "social evolution" and concluded that "[w]hen *Social Change* was first published, fifty years of writing and discussion of 'social evolution' was coming to a close" (Ogburn, 1950:1964, p. 17).

4. Discussion

As mentioned earlier, the first innovation theorists faced the problem of unilinear developmental theory. They experienced the difficulties associated with explaining real social phenomena based on this theory and attempted to overcome these challenges by describing social change through fundamentally "diffusionistic" ideas. In this section, the author will discuss issues relating the controversy between evolutionists (unilinear theorists) and diffusionists.

4.1 Measures in opposition to the theory of "unilinear developmental stages"

As mentioned above, the main purpose of the book *Les lois de l'imitation* was to outline a general theory of sociology. Tarde's strategy, by which he sought to offer a plausible

explanation for social change without using "unilineal development," was to conceptualize the relationships between agents in society. He proposed two types of agents: the inventor and the imitator, and stressed the role played by imitation. While he did not appear to be affected by the German-Austrian diffusionists, he accounted for the phenomena of diffusion through imitation. Instead of explaining social dynamics using developmental stage theory, he referred to idea of accidental invention. Accidental invention, in turn, brings about the conditions that lead to further human desire and prepares the way for future creations. He claimed that "since the desire for cannot precede the notion of an object, no social desire can be prior to the invention by which the conception of the commodity, or article, or service able to satisfy it, was made possible" (Tarde, 1890:1903, p. 93). In this way, Tarde allows historical characteristics to become part of the law of imitation.

To overcome the theory of unilineal developmental stages, Schumpeter took a diffusionistic strategy. He proposed two types of agents: the entrepreneur and the follower, with followers (static agents) significantly dependent on or conditioned by their social, technological, and geographic milieu (circumstances). They are inactive, uninventive, and only adjust to their circumstances. Consequently, in the absence of an entrepreneur, they follow the same trajectory, with only minor progress observed in the population, technology, and accumulation of capital. After the advent of the entrepreneur, static agents began to follow him/her and adjust to changing circumstances, allowing the emergence of a new phase of development. These changes are caused not by a process, like embryonic development, but by the abrupt emergence of entrepreneurial leadership. At a fundamental level, development along this path is uncertain and undetermined. Schumpeter endogenized the entrepreneur within his schema, whereas the entrepreneur was often viewed as an exogeneous variable. Such a heroic image can be seen in the work of Wundt, who was one Ratzel's companions and attributed diffusion to conquest by heroic leadership (Wundt, 1912). Since Schumpeter often cited Wundt, it is possible that he was influenced by Wundt's development theory.

Unlike Boas, Ogburn was not troubled by the controversy surrounding the theory of developmental stages since empirical research had already disproved this dogma. He could therefore use both "independent invention" and "diffusion" based on empirical proofs to explain simultaneous invention. For Ogburn, the point of the argument had already shifted from evolutionist theory to the debate between the "cultural or historical" determinism of invention and the Great Man theory.

4.2 Explanations of simultaneous invention

The old, dogmatic developmental stages theory in anthropology and ethnology assumed that simultaneous invention occurred through "psychic unity." Many of the evolutionist

theorists (such as Bastian, Morgan, and Tylor) supported this view and were subsequently attacked by Boas and the German-Austrian "diffusionist" school. However, Boas came to acknowledge that in some cases, simultaneous invention occurred independently. Tarde also admitted that there was a tendency for simultaneous invention to occur under certain conditions, as already mentioned.

Interestingly, in the first edition of *Wirtschafiliche Entwicklung*, Schumpeter explained that invention was not the driving force, but rather the result of economic development, and emerged when entrepreneurs needed it (ibid. p. 330). Although he stated that the technological and commercial conditions for utilizing inventions were a given in existing economies, he also said that this was not the case for economies in an early part of the developmental stage, or in static economies (ibid. p. 330). In the same paragraph, Schumpeter acknowledged that the store of technological knowledge would accumulate automatically, regardless of whether a society was static.

This reveals an interesting strategy that Schumpeter used to deal with the problem of invention. According to the dispute between evolutionists and diffusionists, the agents within a culture are either inventive or un-inventive, and an invention was assumed to only come about through the efforts of the inventor. Consequently the double explanation of "parallel invention" and "diffusion" was needed. However, if we regard invention as knowledge and admit that it accumulates over time, the importance of an invention will shift from its emergence to its use. In his definition of the entrepreneur, Schumpeter included ancient leaders of a tribe or the general of an army. The existence of such personalities was more common than specific inventions. Under these assumptions, he did not need to classify inventions as independent or diffused.

Under Kroeber's influence, Ogburn took a position of "cultural determinism." For him, the important issue was not how an invention emerged but how knowledge accumulated within a culture. While he formed his invention theory based on the traditional inventor-imitator dyad, he also explained that such inventors emerged and were influenced by their cultural circumstances. He pointed to many simultaneous scientific discoveries and inventions in the modern era as examples, and showed how cultural and historical circumstances led to similar inventions simultaneously because they were based on shared knowledge acquired in similar situations.

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